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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,449	04/20/2004	Koichiro Tanaka	0756-7293	2793
31780	7590	05/15/2007	EXAMINER	
ERIC ROBINSON			STAHL, MICHAEL J	
PMB 955				
21010 SOUTHBANK ST.			ART UNIT	PAPER NUMBER
POTOMAC FALLS, VA 20165			2874	
			MAIL DATE	DELIVERY MODE
			05/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/827,449	TANAKA ET AL.	
	Examiner	Art Unit	
	Mike Stahl	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-16 and 23-48 is/are allowed.
- 6) ☒ Claim(s) 1-4, 17-22, 49 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/16/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

Prosecution Reopened

Applicant is advised that the Notice of Allowance mailed December 15, 2006 is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-2, 17-18, and 49-50 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 2003-287703 A ('703). A copy of the front page of CN 1448753 A and a translation of the description were submitted in the information disclosure statement of March 16, 2007 (after the Notice of Allowance was mailed). Because a full version of the cited Chinese reference was not available, '703 is used in this action. It is in the same patent family as that reference according to a Derwent database. A machine translation of its detailed description was obtained via <http://www4.ipdl.inpit.go.jp/Tokujitu/tjsogodben.ipdl?N0000=115>.

Claim 1: '703 discloses a beam homogenizer including: an optical system for homogenizing energy distribution of a beam spot in one direction (y-direction in this case), the

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beam spot having a linear shape ([0025]), the optical system comprising: first and second cylindrical lenses **34** and **62** (respectively); and an optical waveguide **4** including a pair of reflection planes **41** and **42** provided oppositely, wherein the optical waveguide is provided between the first and second cylindrical lenses, wherein the one direction is a direction of a major axis of the linear shape, wherein the first cylindrical lens **34** has a first surface and a second surface facing the optical waveguide and the second cylindrical lens **62** has a third surface and a fourth surface, wherein a radius of curvature of the second surface is larger than that of the first surface, and wherein a radius of curvature of the fourth surface is larger than that of the third surface. See figs. 1(A) and 1(B), and [0025]-[0028]. The fourth surface is taken as the rightmost surface of lens **62** in fig. 1(A). It is noted that lenses **34** and **62** are depicted as plano-convex lenses. A plane has an infinite radius of curvature. From fig. 1(A) it is apparent that the second surface has a greater radius of curvature than the first surface, and the fourth surface has a greater radius of curvature than the third surface.

Claim 2: In an alternate embodiment, the waveguide is a light pipe ([0015]).

Claims 17-18: In addition to the elements mentioned above with respect to claims 1-2, '703 also discloses a laser oscillator as the source of beam **1** (not illustrated, see [0026]).

Claims 49-50: The second surface is plane as noted above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-4 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over '703 (applied above).

As to claims 3-4 and 21-22, the translation of '703 does not specifically identify the beam aspect ratio and does not mention the arbitrary values which are recited. A skilled person would have understood that the required beam aspect ratio depends on the size of the semiconductor film to be treated. Therefore the selection of an appropriate beam aspect ratio for the '703 device would have been obvious since it is merely a matter of routine experimentation (if not outright design) within the general conditions disclosed by '703 (*In re Aller*, 220 F.2d 454, 105 USPQ 233).

As to claims 19-20, the translation of '703 is silent as to the specific material used in the laser oscillator other than stating that a semiconductor or solid state laser may be used ([0080]). Official notice is taken of the fact that the recited types of lasers were already known in the art of laser annealing. It would have been obvious to a person having ordinary skill in the art at the

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time the invention was made to use any of the recited laser types, because their suitability for use in laser annealing was well known.

Allowable Subject Matter

Claims 5-16 and 23-48 remain allowed as set forth in a previous Office action. In the examiner's opinion these claims are not anticipated by, or obvious in light of, the newly applied '703 reference.

Conclusion

Examiner notes *In re Reynolds* (170 USPQ 94, 443 F.2d 384) for its general guidance that a skilled person trying to construct a device according to a reference would consider the shapes disclosed in the drawings to be meaningful and not accidental or arbitrary. It is well known that patent drawings are not necessarily to scale in terms of relative proportions. However, *Reynolds* suggests that shapes in drawings can be relevant. In the present case, the shapes in fig. 1(A) of '703 conform to commonly used shapes in schematics of optical devices. It is asserted that a skilled person trying to make the '703 device would understand that the cylindrical lenses 34 and 62 in the optical system should have a plano-convex cross section in the configuration shown, and would initially select lenses of that shape rather than (for example) a circular cross sectional shape.

The Kahlert et al. reference cited on the attached PTO-892 form is noteworthy for its discussion of the state of the art (as of early 2003) in laser crystallization of silicon thin films. It

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mentions several types of lasers and describes an example of an industrial production system which produced a beam having an aspect ratio of about 925 (first paragraph of section 3).

Inquiries about this letter may be directed to examiner Stahl at the number below.

Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official correspondence which is eligible for submission by facsimile and which pertains to this application may be faxed to 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions about the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Stahl MSS
2874
571-272-2360

May 2, 2007


HEMANG SANGHAVI
PRIMARY PATENT EXAMINER